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## Poetry.

### THOUGHT AND EXPRESSION.

BY THE LATE MRS. GRAY.

They flit, they come, they go,
The visions of the day;
They change, they fade, they glow,
They rise, they die away.
And all within the scope
Of one poor human breast,
Where joy and fear and hope,
Like clouds on heaven's blue cope,
Can never be at rest.

They press, they throng, they fill
The heart where they have birth.
Oh pour them forth to thrill
The brethren of the earth!
In circles still they swim,
But outward will not go;
The lute strings cage the hymn,
The cup is full, full to the brim,
Yet will not overflow.

When will the lute be stricken,
So that its song shall sound?
When shall the spring so quicken
That its streams shall pour around?
Wo for the struggling soul
That utterance cannot find,
Yet longs without control
Through all free space to roll
Like thunders on the wind!

The Painters's pencil came
The struggling soul to aid,
His visions to proclaim
In colored light and shade;
But though so fair to me
His handiwork may seem,
His soul desponds to see
How pale its colors be
Before his cherished dream.

So from the sculptor's hand
To life the marble wrought;
But he can understand
How lovelier far his thought.
The minstrel's power ye own,
His lyre with bays ye bind;
But he can feel alone
How feeble is its tone
To the music of his mind.

So strife on earth must be
Between man's power and will:
For the soul unchecked and free
We want a symbol still.
Joy when the fleshy veil
From the spirit shall be cast;
Then an ungarbled tale
That cannot stop or fail
Shall genius tell at last!

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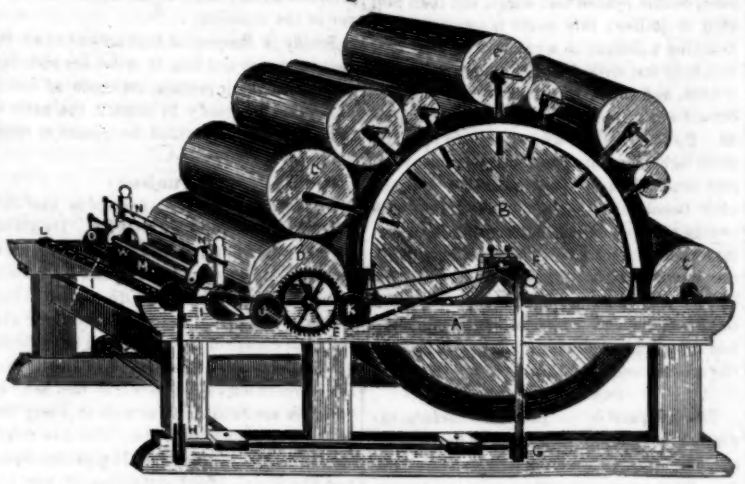
A butterfly basked on a baby's grave,
Where a lily had chanced to grow;
Why art thou here with a gaudy dye
Whilst she of the bright and sparkling eye
Must sleep in the church yard low?

Then it lightly soar'd through the sunny air,
And spoke from its airy track;
I was a worm till I won my wings
And she whom thou mournst like a seraph sings,
Wouldst thou call the blest one back?

## IMPROVEMENTS IN WOOL CARDING.

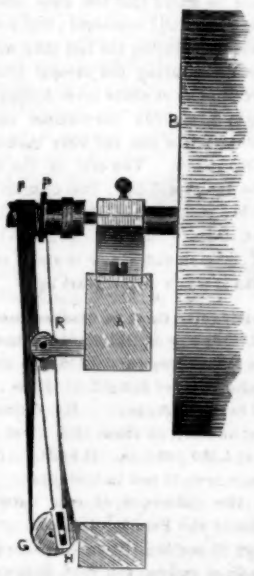
Figure 1.



This is a Condensing Carding Machine, on which valuable improvements have been made both for mixing and carding the wool in the sheet and drawing the roveing at one operation, to fit it for the spinning frame.

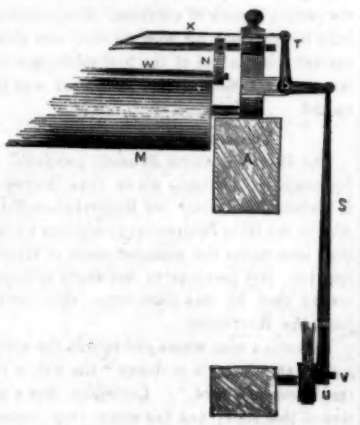
Figure 1, is a perspective view, and figures 2 and 3, transverse sections. The same letters refer to like parts on all the figures. A, is a frame for the machinery. B, is a condensing card cylinder. C, at the right hand is the Lickerin, and the larger cylinders C, and the smaller ones fixed to roll on the periphery of the large cylinder B, are the workers and clearers. All these are covered with cards and the one takes the sheet of wool from the other carrying it and carding it from one to the other until it is received on the *doffer* D. The doffer has a series of rings of cards around it, which form the sheet of wool into slivers, and from thence it is carried between rubbing rolls W, formed into roving and then through a countertwist band, and afterwards drawn between drawing rolls and finished for

Fig. 2.



spinning at one continuous operation on the carding frame. The peculiarity of this machine is, that the condensing cylinder has two motions—a rotary and a side to side motion. This mixes the wool in the most complete manner, keeps the card teeth better pointed and the finishing qualities of the cloths are improved thereby more than 30 per cent, as has been fully tested by the inventors, Messrs. Charles Jackson and James Moir, of Cazenovia, Madison Co. N. Y. who have taken measures to secure a patent. The section fig. 3 shows the way a side to side motion is given to the condensing cylinder while it is revolving. F, is the shaft of the cylinder B. It extends outside of the frame, and there is room between to let the cylinder slide to and fro. From the shaft F, passes a band over a pulley G, which revolves the low shaft seen fig. 1. R, is a reciprocating rod connected by a pivot joint to the frame. This rod is attached to the pulley G, by an eccentric pin passing through the slot H. This reciprocating rod meshes, by a notch on its top, with the ring P, fixed on the shaft F. When the condensing cylinder is revolved, the band that revolves the pulley G, will give a vibrating motion to the rod R, and thus give the condensing cylinder a reciprocating motion, to produce the

Fig. 3.



results we have already mentioned. The rub rolls too, have both a rotary and reciprocating motion. Fig. 3 shows this arrangement. It is produced nearly like that in fig. 2, only the reciprocating rod S, vibrates an angular arm T, which by the rod X, moves the arm N, and the rub rolls W, from side to side. U, V, in fig. 3, is a pulley and eccentric. M, is a cylinder which revolves by means of the gearing K E J I, fig. 1, and carries the roving forward from the doffer D, and revolves the rub rolls, which roll in bearings in the arms G. L, at the side fig. 1, is a countertwist band through which the rovings pass and they are then drawn out in the drawing rolls in front of the machine, and the roving is left free from twist when drawn. This compound motion is as applicable to the Breaker, as the condenser. The improvements embraced in this machine are very important to the woolen manufacture.

More information about this machine, selling rights, &c. may be obtained by letters post paid, to the inventors.

## RAILROAD NEWS.

### Mad River and Erie Railroad.

The annual report of the Mad River and Lake Erie Railroad, Ohio, contains a statement of the income and expenditures of the road for a period of eleven months, ending June—during the last nine months of which the road had been opened for its whole length 135 miles, from Sandusky to Springfield, where it unites with the Little Miami railroad, forming a continued line from Lake Erie to Cincinnati. The income of the road during this period was $147,162 from passengers, and $151,003 from freight, making $298,165; the expenses including $18,710 for interest on loan, amounted to $137,246, making a net income of $160,919. The cost of the road to the present date amounts to $1,754,262, of which $1,400,000 has been paid for in stock paid in. The number of through passengers transported was 27,371, way passengers 49,832, and tons of freight about 35,000.

### Attica and Buffalo Railroad.

The Buffalo papers announce that William Wallace, Esq. who has held the office of Superintendent upon the Attica and Buffalo Railroad since its opening, has resigned, preparatory to entering on his duties as chief engineer of the Buffalo and State Line Railroad. He is succeeded by Mr Martin, the President of the Company. Mr. Wallace has discharged his duties to very general acceptation of the public and the stockholders.

### Providence Railroad.

The Report of the Providence, R I, Railroad, for the year ending July 1st inst., shows the expenses to be the same as last year. The Providence travel with the year has increased 7 per cent, way travel 45 per cent, New York do 29, New York freight 10, and local freight 20 per cent. On the 1st of July, 1849, the corporation was estimated to owe about $110,000 only, and in this estimate was included the probable cost of the West Roxbury branch and of land and buildings in Dedham and land in Boston—a total outlay of $160,000. The West Roxbury branch has just gone into operation. The cars, engines, bridges and depots are represented as in excellent order. The capital stock of the road has now reached its highest limit, $3,160,000.

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The Niagara Falls Suspension Bridge has been again thrown open to the public, having been impassible for some time in consequence of improvements intended to increase its capacity. Several new cables have been added a new floor has been laid, and the structure is now a thoroughfare, perfectly safe for all business purposes, and is capable of sustaining two hundred and fifty tons. A coach and four which with its passengers, weighed over five tons—passed over it a few days since.

### African Gold.

The Editor of the Baltimore Sun has been shown some specimens of gold, received in that city by the last Liberia packet. "It was gathered by the natives of that country from washings at the base of the mountains, and is the richest specimens we have seen. It is said to be more abundant there than in California, and obtained with very little labor.—When the new colony, now being rapidly settled by the colored emigrants, becomes fully developed, no doubt it will be discovered to possess immense wealth in the way of minerals, as well as in other resources, which will be productive of a large trade between that and our own country."

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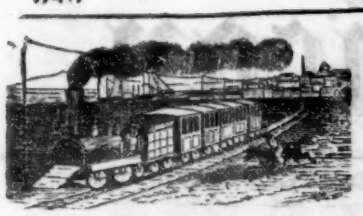
The Elk Lick Sulphur Springs, in Ralls county, Missouri, are becoming celebrated for their medicinal virtues, which in the estimation of medical men acquainted with the subject, are not excelled by the celebrated Blue Lick waters of Kentucky, or the White Sulphur Springs in Virginia.



**Cholera.**

| | | | | |
|---|---|---|---|---|
| Wednesday, July | 11 — | 85 | new cases, | 30 deaths. |
| Thursday, | " 12—116 | " | 38 | " |
| Friday, | " 13— 80 | " | 38 | " |
| Saturday, | " 14—123 | " | 51 | " |
| Sunday, | " 15— 76 | " | 37 | " |
| Monday, | " 16—155 | " | 65 | " |
| Tuesday, | " 17—103 | " | 51 | " |

**Advice to Inventors.**

These persons who have made recent inventions and improvements in machinery and desire to secure their rights by letters patent, are informed that this is the most favorable time for them to make application. Business is very quiet in all departments of trade at this season of the year and most Patent Agents can give their personal attention to drawing specifications and superintending applications entrusted to their care, while at other seasons many are obliged to confer their business upon others who are less familiar with the modus operandi of the Patent Office. We would advise those who have important inventions on hand which they design to secure by letters patent, to improve the present time and place their business in the hands of some experienced agent without delay. The acknowledged "*best patent agency*" in the United States is at the Scientific American Office, 128 Fulton street, where more of such business is transacted than at any other agency in the country, and nearly as much as at *all* the other establishments *combined*. During the last six months ending with June, over 100 applications, for letters patent and caveats have been filed in the Patent Office, by Munn & Co., and notwithstanding this vast number of applications but very few have been rejected or returned for amendment of claims Advice upon Patent Office business cheerfully given and models of new inventions examined, without charge. Address

MUNN & CO.

Publishers of the Scientific American, post paid.

**Woodbury's Horse Power and Seperator.**

These excellent machines are very highly esteemed wherever they are introduced. In the Boston Cultivator of last week, Messrs. T. and C. H. May of Woodstock, Ct., published a letter stating that this horse power in their opinion, is one of the best in use, that it is capable of doing more work with less power, than any other with which they are acquainted; requiring the power of only three horses to saw from 20 to 30 cords of hard wood, twice in two in one day, and with ease.

The letter states it to be their opinion that "Woodbury's Horse Power and Seperator, for threshing and cleaning grain, cannot fail to give satisfaction to those possessing the power of three horses only, to thresh and clean from fifty to an hundred bushels of oats per hour." This is high testimony indeed. Our readers will remember that both of these machines have been illustrated and described in the Scientific American They are now manufactured at Rochester, N. Y.

**London Dress Makers.**

There are about 15,000 milliners and dress makers in London. They commence work usually at from 14 to 16—that is to say, at an age when their future health and constitu are determined by the care they then receive. A very large portion of these girls are boarded and lodged by their employers, and they often come from the country healthy and strong During the busy season—i e. from April to August, and from October to Christmas—the regular hours of work "at all the principal houses" are, on the average, eighteen hours daily

A great number of these girls become abandoned, being driven to prostitute virtue to be relieved from drudgery. How much guilt belong to the rich votaries of fashion, the judgement day will reveal in terrible distinctness.

**Currants and their Products.**

No small fruit is more sure of a market than currants, as the manufacturers of currant jelly will insure a continuance of demand. Currant jelly, well made, will always find a ready market in New York, and the other large cities, at from fifty cents to one dollar per quart, while currant wine, of good quality, sells readily at one dollar per gallon.

CURRANT JELLY.

Place the currants in a stone or glass jar, and suspend the jar in a vessel of boiling water until the currants are in a condition to yield their juice readily: then place them while hot, in a bag, and press out the juice; add pure, double refined loaf sugar, and then boil until it jellies; this point is ascertained by dropping a portion on a cold plate, and if it will hold fast with the plate upside down, it is done, and should be removed from the fire Should any scum arise, it may be skimmed off. Put the jelly, while hot, into jars, and cover tightly. Our experiment resulted last year thus: Twenty seven quarts of currants gave twenty nine pints of juice, and with twenty nine pounds of double refined sugar, gave eighteen and a half quarts of very superior currant jelly. Those who suppose that currant jelly can be made with common brown sugar, or even with inferior loaf sugar, will find themselves without a market, as an inferior article cannot be sold.

CURRANT WINE.

To each quart of the juice of currants, expressed cold, add three pounds of fine loaf sugar, and as much water as will make one gallon; fill the cask with this mixture, and permit it to work; rack it, &c. in the same manner as cider; the addition of brandy or extra alcohol, in any form, alters and injures the flavor; and if the sugar used be thoroughly refined, the natural alcohol formed during its fermentation, will be found to be fully sufficient for its preservation.

The white Dutch currant makes of course a paler wine than the red, and of very superior flavor. The black currant requires one third less water, and produces a wine slightly resembling port. It also makes a syrup excellent for sore throat.

[The above is from our excellent exchange the New England Farmer. We believe that the products of the currant are not sufficiently prized by our people. In making red currant jelly, the flavor is greatly improved by employing one quart of red raspberries to every twelve quarts of currants. Black currant jelly is excellent for sore throats, and black currant wine is one of the best medicines for fevers and inflammations that ever was invented.

**Death of Littlejohn.**

The *Western Olive Branch*, published at Indianapolis, Indiana, states that Augustus Littlejohn, the celebrated Revivalist recently died in the Ohio Penitentiary, whither he had been sent under the assumed name of Hamilton, but just previous to his death acknowledged that he was none other than Littlejohn, the Revivalist.

This was a man whose end fulfills the scripture in that forcible sentence "the way of the transgressor is hard." Littlejohn was a native of this state, and has some very respectable relations now living in it. He was highly distinguished, for revival qualifications--during a period of animal excitement conversions, so hurtful to some churches. He married a fine lady in Chenango County, N. Y., but she left him—being of too pure a nature to live with such a sinner, minister though he was. He had a great deal of brass in his face, and he served the devil well in the livery of Heaven. He was a Presbyterian Clergyman, but of no education, beyond the limits of his mother tongue, and with good English authors he was totally unacquainted. First he was a canaller, then a preacher, then a convict—we should like to know how he died.—We have said this much about a man, who because he figured conspicuously at one period in the middle districts of this state, and many of our readers must have heard about him.—His life is one to point a moral, more than adorn a tale. From it, oh fellow man do not forget the contrast, exhibited by the life of the just, whose path "is like the sun when shining more and more unto the perfect day."

**Notice to Inventors.**

Inventors can facilitate the preparation of their applications to the Patent Office, by accompanying the models, which they send to us, with a description of the merits and novelties they consider peculiar to their inventions. Let it be plainly written and as familiarly expressed as if the inventor were in conversation with the agent who prepares the drawings and documents.

A little consideration must convince the applicant that an agent cannot be too fully informed of the parts, contrivances, combinations and results which may appertain to an invention, and that no one can afford this information so readily as the ingenious contriver of the machine.

Briefly in the way of instructions to an Inventor, we request him to write his own description of the invention, its mode of operating, and especially to remark the parts or the action of them which he claims as original

**The Punjaub.**

The territory recently annexed to the British dominions is very extensive. It extends between the 28th and 36th parallels of north latitude, and between the 71st and 77th meridians of east longitude. With mountain ranges on northeast portion which reach an elevation of two or three miles, and with broad plains, descending towards the south till they are scarcely above the level of the sea, all varieties are obtainable, as well as every description of natural produce. The five rivers, the Indus, the Jhelum, the Chenab, the Rance and the Sutlej, afford navigation of not less than 1960 miles. Iron, copper, lead, salt, coal, nitre, plumbago and even gold mines, abound. The territory includes Cashmere, with its harvest of saffron and its important manufacture of shawls. The population is computed at three millions and a half.

**Shoe Business in Lynn.**

The shoe business is the life of Lynn. Only women's, misses' and children's shoes are made here. Engaged in this business there are of manufacturers, or men who 'carry on' the business, 78; of cutters or men who 'cut out' the shoes, 175; of men and boys so employed in making shoes 2,458; of men and boys so employed but living out of town, 900; of women and girls employed in binding shoes, 4,925; of the same so employed and living out of town, 1,600; making of employees an aggregate of 10,058. The number of men and boys employed in making shoes is more than seventy per cent. larger now than it was in 1842. The increase of the number of women and girls employed in binding shoes has, we presume, been correspondingly great. But it should be stated that the shoe business in 1842 was unusually depressed; that much less of it was done during the last than will probably be done during the present year. The number of pairs of shoes made during the last vear was 3,190,000; the number purchased from other towns was 350,000; making in all 3,540,000 pairs. The cost of the material of these was $1,435,545; that of making them $957,030; making the cost of the 3,540,000 pairs of shoes to have peen $2,392,575. The cost of making shoes now is about one-sixth less than it was a dozen years ago.

**Arthracite Coal in Massachusetts.**

Prof. Ridgway of Philadelphia, the gentleman to whom was committed the survey of the coal district of Marshfield Mass, has reported to the Company. He estimates the amount of coal, on about 1500 acres of their lands at 4,000,000 tons. It exists in five beds. One vein is eight feet in thickness. It estimates the difference of cost between the Marshfield and Pennyslvania coal at Boston, to be $2.20 per ton. Its composition shows 94 per cent, of carbon, and Prof. Ridgway states that it burns with more flame, and ignites more rapidly, than any red ash coal he has ever seen. If his statements are correct the discovery will be most valuable to the State.

A French traveller thus contrasts London and Paris: In the former life is within doors, in the latter, life is in the street. London is monstrously immense, with prodigious establishments of shopkeepers and is excessively luxurious in its aspects, and very much inclined to gipseying.

**Kossuth.**

When Hungary was invaded by Jellachich in September last, and 50,000 armed men were collected in a fortnight, in the neighborhood Stuhlweissenburgh to repel the aggression, Kossuth issued a proclamation, from which we extract the following sentences:

"It is an eternal law of God that whosoever abandoneth himself, will be forsaken by the Lord." "It is an eternal law that whosoever assisteth himself, him will the Lord assist."—"It is a divine law that false swearing by its results chastiseth itself." "It is a law of our Lord's that whosoever availeth himself of perjury and injustice, prepareth himself the triumph of justice." "Standing firm on these eternal laws of the Universe, I swear that my prophecy will be fulfilled—that the freedom of Hungary will be effected by this invasion of Hungary by Jellachich."

This proclamation, which electrified the chivalrous people to whom it was addressed, concludes in a style not unworthy an Eastern prophet, not unsuited to the genius and origin of his race, by these words: "Between Vesprim and Weissenburg the women shall dig a deep grave in which we will bury the name, the honor, the nation of Hungary, or our enemies. And on this grave shall stand a monument inscribed with a record of our shame, 'So God punishes cowardice:' or we will plant on it the trees of freedom entirely green, from out of whose foliage shall be heard the voice of God speaking, as from the fiery bush to Moses, 'The spot on which thou standest is holy ground:' thus do I reward the brave. To the Maygars freedom, renown, well-being and happiness.

**Guard against Premature Burial.**

A learned Belgian, M. Mainple, has recently discovered a very simple means of distinguishing between real and apparent death.—It consists in creating a small burn; if there is life a blister is always formed, even in the absence of apparent sensibility. If death has already intervened, nothing of the kind occurs.

**Size of an Angel.**

Bishop Purcell of Cincinnati, ordered two statues representing kneeling Angels, "of the natural size," of Mr. Powers, which were to be accompaniments of the Altar of the Cathedral recently erected in that city. Powers wrote back to the Bishop that he had never seen an angel, and did not know what the natural size was. Upon this the Bishop referred him to Rev. XXI. 17th, for his measurements. One of the figures has arrived, and is 6 feet on its knees.

**Accuracy on a Railroad.**

The accuracy with which time is kept on the Boston and Alabany railroad is wonderful. It states that the books at Springfield station show that, for six months, ending the first of May last, the Albany train never varied more than a half minute in the time of its daily arrival at Springfield.

**The Oldest Inhabitant Dead.**

A writer in the *Savannah Republican* mentions the death on the 29th of March of Mrs. Lourania Thrower at her residence on the Ogechee, who was at least one hundred and thirty three years of age. At a census taken in 1825, her age was put down at 110 and some accounts made her 137 at the time of her death. She had seven children before the revolution; her youngest living child is between 70 and 80; she has great-grand-children 30 years old, and a number of great-great-great-grand-children living in Florida. Her sight failed her for a while, but returned 20 years ago, so that she could thread a fine needle, or read the finest print. Her faculties remained almost unimpaired till her death.—She had been a member of the Baptist Church for more than a hundred years.

A German paper says that suspension of life caused by prussic acid, is only apparent; life is immediately restored by pouring acetate of potash and common salt dissolved in water on the head and spine. In that country rabbits have been at once recovered from the effects of prussic acid by this means.

The poet Rogers said that Mr. Croker, the author of the article in the Quarterly Review on Macaulay's History, intended murder, but had committed suicide.

### Paine's Hydro Electric Light.

WORCESTER, July 11th, 1849.

MESSRS. MUNN & Co —I have been looking in your Journal for the last three weeks, expecting to find some account of Paine's Hydro Electric light, it having been in operation here, with few exceptions, every night during the past month, the other day I met Mr. Paine in the street and enquired why the press was so silent on a subject so momentous and so publicly successful; his reply was, that some editors who had witnessed its action, both at his residence and from the lighted town, had declined noticing it, because he would not explain the whole method employed to produce the light. Now you are aware that whenever any new project is started there is always a party who employ themselves in placing obstacles in the way of its completion, all inventors are cognizant of this fact, and there is also generally a few who although they cannot fully understand the entire points of the proposed improvement, yet have sufficient respect for the inventor to await the result of his experiments. In Worcester we have both those parties, and to the latter belongs your correspondent, and I must confess, that this communication is more the result of personal statement consequent on his ability to turn the laugh on the sceptics, than any other motive. Mr. Paine has fully accomplished all he promised in his circular. When he spoke of furnishing light equal to good gas burners for one mill per hour, he meant the expense incident to materials consumed, not the interest or money expended in the construction of buildings and machinery. During the past winter Mr. Paine has had his parlor and laboratory illuminated by gas generated from water and the only power used was a common brass eight day clock wound up every morning; and the only material consumed was about one half pint of water, the whole apparatus could be lifted by a man of ordinary strength, and its operation was witnessed by hundreds of visiters at his house, the whole apparatus being shown except certain parts where the currents of electricity are broken and connected. The decomposing poles being in glass receivers, enabled the spectators to witness the passing of the gases from their aquatic to their æritorm state, presenting a beautiful and interesting phenomena. In the month of February last, his first public experiment was made from the cupola of the Exchange in this city, by burning a jet in the focus of a parabola reflector the light of which enabled a person to read newspaper print at a distance of one mile. In May last he erected a hexagon tower a mile south of the city, and in this tower is placed all the apparatus necessary to light a city of much larger dimensions than Worcester, or for a light house on the coast. In the lantern are three reflectors 4 feet in diameter each, with a focal length of 16 inches, the jets connected with these reflectors are not yet completed but orifices equal to their whole vents are punctured in the receiver and the apparatus keeps a full gush of the gas passing through.

The machinery consists of a 69 pound weight which drives a train of wheels, which in their turn give motion to six helices revolving between the poles of twelve V. magnets, this weight is wound up four times a day, and falls each time about sixteen feet. The whole apparatus without the buildings and reflectors cost $300. Now this apparatus has been running for four weeks past and has constantly supplied three jets, each of which will produce light equal to 10,000 gas jets of the ordinary street kind. A jet has been burned most every evening in a small parabola reflector sending a stream of light like a lightning flash over our city, and Mr. P. expects to light the great reflectors next week. These are sober facts that any one can realize that chooses. Water is made to produce a light that rivals the solar rays by means of the simplest nature, and the invention in its results, does not stop at light, it is destined to work a revolution in motive power as great as it has in purposes of illumination. There is much dissatisfaction among Mr. Paine's scientific acquaintances, consequent on his refusing now to trust the Patent Office with the whole features of his discovery, but I think he is right in his determination to let his light burn one year, a burning demonstration of the fact of his discovery, and a challenge to the world to accomplish the same thing. It is a very easy matter after a man has explained how he produced a result, for others to make their eggs stand on end, and prove too, that they have made them stand before. With Mr. Paine, as with all other true inventors, reputation is the first consideration. I know that no mercenary motive prevents his making his discovery public, for he has sold a portion of it for a sum that puts him beyond pecuniary embarrassment.

Your obd't. serv't., G. C. T.

[Our correspondent states a fact, when he says that there are some who after having expressed a contrary opinion to a new project, throw obstacles in the way of its completion. This is wrong, we condemn such a spirit. But then there are others who philosophically urge arguments against a new project, and if their argumuents are not controverted and the matter explained, no fault can be found with them. It is well known to every man acquainted with electric science, that a galvanic battery will decompose water, the oxygen escaping at the positive pole and the hydrogen at the negative. If these two gases be conveyed in tubes and burned on a piece of lime, we have the well known Drummond Light. If the opposite currents of a galvanic battery meet on a point of carbon, a splendid light is the result. All these modes of producing artificial light are more expensive than common gas, (carburrated hydrogen.) The decomposition of water by electricity generated by *mechanical means*, as stated above, places us at fault, in regard to Mr. Paine's Light, although we know that chemical decomposition has been effected by *magneto electricity*.

### New Electro Magnetic Clock.

Messrs. W. T. Henly and D. G. Foster, philosophical instrument makers in Clerkenwell, Eng., have lately secured a patent which they call a mode of imparting motion to a train of wheel work, with or without an auxiliary power, for the purpose of giving correct time by means of magneto-electric machines, voltaic batteries, near or from a standard time keeper at a distant station. In this case, a very neat arrangement of wheel work is used for regulating the clock by the induced electric currents, in connecting with a spring and fusee, only one hand being made use of, instead of two, to show the time upon the dial, the face of such dial being marked out as usual with the hours; between the figures, representing the hours, are also marked every five minutes, that the time may be read off with the same facility as with two hands. This arrangement the patentees propose to apply to all ordinary clocks. The spring and fusee may be dispensed with, if desired, and motion given to the clock by currents derived from a voltaic battery. The circuit reverses, of a peculiar construction, for this purpose, are described; the first is attached to the escape-wheel arbor, and consists of two brass segements, fixed around the arbor with ebony, or some other non-conducter, and connected with the arbor by means of small metal screws. The brass flanges, fitted with platinum points, dipped in a cup of mercury are also fixed to the arbor. The segmental pieces have also platinum points which dip into other cups of mercury, all of which are properly connected by wires with the battery. By this means, it will be seen, that at each revolution of the arbor, the circuit will be completed and twice broken. In the second arrangement, the reverser is placed upon the pallet arbor; it consists of two isolated arms, placed across the arbor, one of which is in metallic connection with the arbor, and the other with a cup of mercury connected with the battery. The ends of these arms carry platinum points, which, as the pallet vibrates alternately dip into the right and left hand cups of mercury, the cups being connected with each other by transverse wires.

[The above is from the London Mechanic's Magazine. The description does not convey unto us any thing new, in the results produced, and this is what we have to look at, in judging of the merits of any invention. The electro magnetic clocks that are in use at present, keep regular time; one battery can move a thousand at once however distant they may be, and the American Magnetic Astronomical Clock can register the signs. This is the very perfection of Magnetic machinery.

### A Hundred Years Hence.

It strikes me as the most impressive of all sentiments—That it will be all the same a hundred years after this. It is often uttered in form of a proverb, and with the levity of mind that is not aware of its importance. A hundred years after this! Good heavens! with what speed and with what certainty, will those hundred years come to their termination! This day will draw to a close, and a number of days makes up one revolution of the seasons. Year follows year, and a number of years makes up a century. These little intervals of time accumulate, and fill up that mighty space which appears to the fancy so big, and so immeasurable. The hundred years will come, and they will set out the wreck of whole generations. Every living thing that now moves on the face of the earth will disappear from it. The infant that now hangs on its mother's bosom will only live in the remembrance of his grandchildren. The scene of life and of intelligence that is now before will be changed into dark and loathsome forms of corruption. The people who now hear me they will cease to be spoken of, their memory will perish from the face of the country; their flesh will be devoured by worms and the dark and creeping things that live in the holes of the earth will feed upon their bodies; their coffins will have mouldered away, and their bones be thrown up in new made graves. And is this consumation of all things? Is this the final end and issue of man? Is this the upshot of his busy history? Is there nothing beyond time and the grave to alleviate the gloomy picture, to chase away these dismal images? Must we sleep forever in the dust, and bid an eternal adieu to the light of heaven?—[Dr. Chalmer's Sermons

[The above thoughts (before we read them in the foregoing) have often flitted across our mind. They should be deeply impressed upon every heart. In view of the future, we should all live, not for the opinion of the world, but in a virtuous atmosphere of soul, regardless of the opinions of others. He whose conduct is squared merely by what the world thinks of him, will do wrong, in proportion to his opinion of not being detected. He who has uprightness and integrity within his heart, and between his heart and his Maker, will be sure to live above the world, its vanities, follies and vices.

### An Unknown Land.

The English have recently made a settlement at Aden, near the Red Sea. Having once obtained a foothold, they, English like, began to push about them, and one of their first discoveries was a river where none was marked upon any chart, and upon this they steamed 300 miles without finding the least obstruction. Having now passed round this continent, let us look up in the interior. For half a century the English government have been expending lives and treasures in a partial exploration. They have found that this whole tract of country is one of amazing fertility and beauty, abounding in gold, and all sorts of tropical vegetation. There are hundreds of woods, invaluable for dying and architectural purposes, not found in other portions of the world. Through it for thousands of miles sweeps a river, from three to six miles broad, with clear water and unsurpassed depth, flowing on at the rate of two or three miles an hour, without rock, shoal or snag to interrupt its navigation. Other rivers pour into this, their tributary waters, of such volumes as must have required hundreds of miles to be collected, yet they seem scarcely to enlarge it. This river pours its waters into the Atlantic through the most magnificent delta in the world, consisting perhaps of a hundred mouths, extending probably five hundred miles along the coast, and mostly broad, deep and navigable for steamboats. Upon this river are scattered cities, some of which are estimated to contain a million of inhabitants, and the whole country teems with a dense population.

Far in the interior, in the very heart of the continent, is a nation in an advanced state of civilization. The grandeur and beauty of portions of the country through which the Niger makes its sweeping circuit are indescribable. In many places its banks rise boldly a thousand feet, and are thickly covered with the richest vegetation of tropical climes. But all this vast and sublime country, this scope of rich fertility and romantic beauty, is apparently shut out forever from the world. It is the negroe's sole possession. He need not fear the incursions of the white man there, for over this whole lovely country moves one dread malaria, and to the white man it is the "valley of the shadow of death." In expedition after expedition sent out from the English ports on the island of Ascension, not one in ten has returned alive—all have fallen victims to this seemingly beautiful country. It seems impossible for an Englishman to breathe that air. So dreadful is it—so small the chance of life, that criminals in England have been offered pardon on condition of volunteering in this service, more terrible than that of gathering the poison from the fabled Upas. This country, tempting as it is, can only be penetrated at the risk of life, and it is melancholy to think that those who have given us even the meagre information that we have, do it at the sacrifice of their lives.

The only tolerable account which we have of this country, is published by a Swiss Officer in the service of the Egyptian Government, who was a member of an expedition fitted out by Mehemet Ali. He could give but little account of the country however, only, they saw races of the most degraded negroes, and some fine specimens of humanity in other races. One tribe averaged both men and women, seven foot in stature.

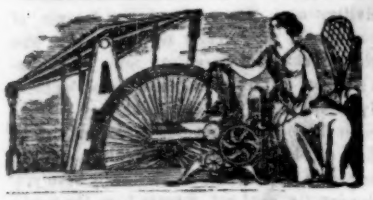
### Oxygen.

When pure oxygen is taken into the lungs, it causes the blood to circulate much more quickly than when common atmospheric air is inhaled. This is due to the fact that the combustion of the excess of carbon contained in the blood, is accelerated in the lungs. Oxygen gas may, consequently, be administered medicinally and with advantage in certain cases of sluggish circulation; but no person unacquainted with medicine should do so, except by the advice of a professional man; for when the slow circulation of the blood is consequent upon weakness in the lungs, the excess of oxygen inhaled, not finding blood sufficient for its saturation, would, probably, act upon the lungs themselves, and the consequences might prove fatal. The stimulating effect of oxygen on small animals may be easily observed by placing a mouse in a jar of of oxygen; a glow-worm also, if placed in a jar of oxygen, shines with increased brilliancy.

The combining proportion of oxygen is 8; that is to say, when oxygen is combined chemically with any other body, the proportion of oxygen in the compound is always either 8, or some multiple of that number. In water, for instance, the ratio is 8 of oxygen, and 1 of hydrogen, and in sulphuric acid 24 (8X3) of oxygen, and 16 of sulphur. Oxygen, is generally expressed by the symbol, O, or a dot.

### How to be Happy.

"Sometime since," says Dr. Payson in a letter to a young clergyman, "I took up a little work purporting to be the lives of sundry characters as related by themselves. Two of these characters agreed in remarking that they were never happy until they ceased striving to be great men. This remark struck me, as you know the most simple remarks will strike us, when Heaven pleases. It occured to me at once the most of my sufferings and sorrows were occasioned by an unwillingness to be the nothing which I am, and by consequent struggles to be something. I saw it I would but cease struggling and consent to be any thing or nothing, just as God pleases, I might be happy.—You will think it strange that I mention this as a new discovery. In one sense it was not new: I had known it for years. But I now saw it in a new light. My heart saw it, and consented to it; and I am comparitively happy. My dear brother if you can give up all desire to be great, and feel heartily willing to be nothing you will be happy too."



# New Inventions.

### New Mortising Machine.

Mr. Levi S Enos, of Wellsboro, Pa., has invented an improvement on a Morticing Machine, which has some advantages over many others, and of morticing machines there are a great number. In this one the timber to be morticed is set out true beneath the chisel, and is held firm until all the mortices are made. The work is not shifted, but the cutter. This we think is one advantage for many kinds of work. The cutting chisel is operated by a horizontal lever giving it a reciprocating motion, and simply by moving a set screw on the one side, and by lifting a ratchet, and working the chisel lever, the small sliding frame on which the chisel lever is fixed, is moved from side to side, and backwards and forwards. This method of operating the chisel, affords great latitude of operation on the work to be morticed.

### New Spike Machine.

Mr. E. B. White of Nashua, N. H., has invented a new improvement on Spike Machines which promises to be valuable, as it is very simple. The machine consists of two steel rollers with half creases the shape of the spike cut on each. The bar of iron for the spike is cut off on the top of one roller by a vibrating hollow cutter, and it is then carried between the two rolls when the creases meet, and at that period, a reciprocating header forms the head of the spike. The header is a die, and it forms a most beautiful head. The rolls therefore have an intermittent rotary motion, communicated by pall and ratchet. The inventor has taken measures to secure a patent.

### Improvements in Cotton Manufacturing Machinery.

Mr. G. W. Howard of Providence, R. I., has invented some improvements in machinery for manufacturing cotton, which promise to be valuable.

1st A coiling motion which although not better than any other, as to the quantity or quality of the work, it will perform; is so arranged as to attach one to each and every card, and by varying the height, or length of cams used, the roving is made ready for either mule, or throstle, or ring spinner, or deed spindle flyer.

2d. An attachment to the warp spinners for sizing the yarn, ready for the loom; saving the operations of spooling and dressing and consists in a reservoir to each frame; and a tube running the length of the frame each side, made of copper rolled thin and not closed, but being set on a level and supplied by a regular feeder, is always kept full of size of sufficient consistency to coat the thread immediately on leaving the rollers, but not saturating the yarn so much, but what it will dry at an ordinary heat before it reaches the bobbin, and for wet weather there is an air tube, supplied by a blower from a furnace, which is to be arranged in a convenient manner to open or shut off, as the necessity of the case may require.

3d. An improvement to obviate the difficulty of using so many bobbins on the warper as would be required for a whole warp and only to use 1-4 of the required number for fine yarn, and wide goods; but for coarse and narrow calicoes to warp ½ of the web on a beam, for the loom; and by inverting one beam on the loom, he can with the addition of one roller lay the warp even, but in using 4 beams, they will be only half the length of the wide loom, and 2 of them will be on a level rod below, the other 2 inverted above one end of each of these section beams being made very thin, in order to join close in the middle and the other end geered for the let off motion, or by a better way, equally weighted and fastened to a spring inside the loom.—These 4 beams will require rather more care, to keep them evenly weighted and banded to make even cloth.

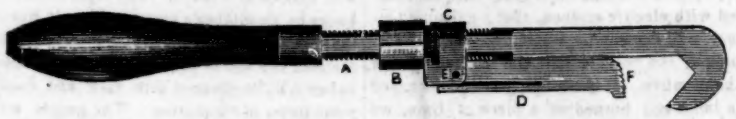
### A New Telegraph at Berlin.

On the 30th of May last, Mr. C. W Siemens of Berlin, read before the Society of Arts an account of a new telegraph in constant operation in Germany, an invention of E W. Siemens, his brother. One advantage it has, is in the small amount of electricity required to work it; the current is broken in each instrument before the attraction of the armature of the electro-magnet is completed; but the more intense the supply of magnetism the quicker they work. The principal feature in Siemen's invention consists in breaking and restoring the galvanic current by the electro magnet itself, at the moment when the vibration of the armature to the one side or the other is ended. This makes it a self-acting machine. By this telegraph all important debates in the German Parliament at Frankfort are conveyed 350 miles to Berlin, and published next morning.

### Cotton Rope.

The editor of the Charleston S. C. Mercury speaks in terms of strong praise of a sample of cotton rope, manufactured in Barcelona, Old Spain, which has been presented to him by the captain of a Spanish vessel. The donor states that he has been using it for years on board his vesel for various purposes, and considers it, in many respects, superior to hempen cordage. It works remarkable free, and retains its softness and pliability in the coldest weather, and as an evidence of its durability, he affirmed that the cotton tiller rope then on board his vessel, had been in use for more than three years, while the same article made of hemp, had to be renewed at the end of every voyage. It is manufactured out of refuse cotton.

## IMPROVED WRENCH.




This is a tool invented and manufactured by Mr S. Merrick, of Springfield, Mass. It is a most excellent article and is intended for grasping and turning round bolts, nuts, gas pipes, fittings, &c. and is readily adjusted to any size within its compass. Mechanics will readily perceive that the form of its jaws are different from others and it is well known that the only tool now in use for the same purpose as this is designed, is a clumsy pair of tongs for each particular size of pipe. A, is the screw shank of the fixed jaw. B, is the nut that moves the collar C of the jaw F. This jaw is secured to the collar C, by a pin E, passing through which forms a pivot joint. D, is a flat spring attached to the jaw and resting on the front of the collar C This spring keeps the jaw F, firm, and the joint E, stiff. The object of this spring and the joint is this. When a twist or wrench is given to a nut, by exerting a slight pressure outwards on F, the spring D, allows the jaw to open a little—on its joint, and the wrench in a moment is turned back for another catch. This is a very excellent arrangement. It will be observed that a small ring of the nut B, works into a recess of the collar C, to slide it, and thus move the jaw. There is no tool in use for the same purpose, that can approach this one.

### Improved Hand Drill.

A is the drill spindle. B is a small iron flywheel firmly secured to the spindle. C is the handle; it is made of wood and has an opening through which the spindle passes, of a sufficient bore to allow the said handle to be moved freely up and down. E is a fixed button on the top of the spindle. D D, are two cat-gut or other good cords, secured to the extremities of the arms, and also secured on each side at the top of the spindle forming the apex of the cone. Operation.—When the drill is placed on that part of the iron work in the position represented above, to bore a hole, the handle C is held firmly while the flywheel B is turned round, coiling up the cord D on the spindle, and raising up the handle C.—When the handle is raised up some distance, (according to the stroke you want to make,) it is pressed down, the flywheel D flies back, and when the handle comes down to the length of its string it is quickly raised up, the cord coils round again, the handle is again brought down, and so on; the flywheel keeping up a semi rotative motion and enabling the operator to drill small work with great ease. It is the pressing down of the handle, which by the coiled cord acts as a spring, operates the drill; while the first momentum given to the flywheel to coil up the cord, always acts again, through the fly wheel, to coil up the cord and raise the handle for another effort. This is a very handy tool in any machine shop, especially for drilling some metal articles that would be troublesome to put in the lathe. Any person can make one by the foregoing description.

### New Chimney Cap.

The Washington Republican states that Mr. Charles W. Russel of that city has perfected an invention for curing smoky chimneys, for which he claims and has filed the necessary papers for obtaining a patent. The principle is simple, and those who are troubled with smoky chimneys know practically its utility. There are two chambers—one small, the other large—the small one to admit the rarefied air from the fire into the larger one; and, once there, it has no chance of escape but to ascend, the expansion forcing a current of air through all opposition. The invention has been tested and works to a charm.

Mr. Russell is now employed by the Secretary of the Senate and Clerk of the House in rectifying the chimneys of the Capitol, which have long been a source of annoyance on account of their smoking very badly in windy weather; and many methods have been tried without success to cure them.

### Gas from Wine Dregs.

Two French chemists in Paris, Messrs. Livemis and Berhardt, have ascertained that the decomposition of grape skins, after the last pressing and lees of wine, disengages a carbonated hydrogen gas of a superior quality.—A pound of dried grape skins, placed in a white-hot retort, furnished, in less than seven minutes, 350 quarts of excellent carbonated hydrogen gas. The gas burns with a brilliant white flame, is without odor, and emits little smoke in comparison with that produced from pit coal and rosin. An experiment with the dried dregs of wine was equally satisfactory.

### New Copal Solvent.

A beautiful varnish can be made by dissolving copal in chloroform, it can also dissolve other resinous substances, and also fatty matter, and is therefore enabled to make a very excellent leather varnish.

### Application of Gun Cotton to the Silvering of Looking Glasses.

Mr. H. Vohl, of the Paris Academy of Sciences, has recently discovered that a solution of gun cotton in a caustic alkaline ley, possesses in a high degree, the property of precipitating silver from its solutions in the metallic form. If gun cotton be placed in contact with a caustic alkaline ley of sufficient strength, the cotton dissolves in the ley with the disengagement of considerable heat, and of ammonia, and furnishes a deep brown liquor, sometimes rather thick; which, on the addition of an acid, gives rise to a brisk effervescence, with disengagement of carbonic acid, and nitrous acid.

The manner in which the gun cotton comports itself in this case, shows, that this substance is not dissolved as such, but undergoes a decomposition, in which the atoms of the oxygen of the nitric acid combine with an atom of the carbon of the cotton, and give rise to the carbonic acid; which, as well as the nitrous acid, combines with a portion of the potash. A new decomposition of the nitrous salt by the potash, in presence of substances containing hydrogen, furnishes the ammonia.

The most remarkable property of this alkaline solution, is the following:—If a few drops of nitric silver, be added to the solution and enough ammonia added, so that the oxide of silver which is formed becomes re-dissolved, and heat gently applied by means of a water bath, a moment arrives when the liquid assumes a dark brown color, showing an effervescence, and all the silver is precipitated on the sides of the wood containing the solution, as a polished mirror. The mirror thus obtained, surpasses considerably in brilliancy that which is produced by etherial oils or ammoniacal aldehyde; and its ready production must give it an important place in many practical applications.

It is not only the gun cotton which possesses this property; it is found that cane sugar, milk sugar, mannite gums, and other substances, which become explosive when treated with nitric acid, act the same. The picrozotic acid itself, under the same circumstances, produces a bright metallic surface; and it would appear that this reaction takes place with all those bodies which, treated with nitric acid, do not furnish the products of oxidation; but another series of bodies which admit nitric acid as such into their constitution, and at the same time abandon the equivalent of water.

### Utility of Nettles.

The Medical Times says it is a singular fact that steel dipped in the juice of the nettle becomes flexible. Dr. Thornton, who has made the medical properties of our wild plants his peculiar study, states that lint dipped in nettle juice and put up the nostril, has been known to stay the bleeding of the nose, when all other remedies have failed—and adds that fourteen or fifteen of the seeds ground into powder, and taken daily will cure the swelling in the neck known by the name of goitre, without in any way injuring the general habit.

### A North Carolina Factory.

At Salisbury, N. C., there is the Rowan Factory which has 3000 spindles and 70 looms in constant operation; and the number of hands employed, male and female, is 120 The machinery is propelled by an engine of fifty horse power, which consumes from five to six loads of wood per day. Not less than 60 barrels of flour are used in starch, and 1000 bales of cotton are used up in a year.

The cloth, which weighs three yards to the pound, and appears to be of an excellent quality, is made of No. 14 and 15 yarn; it is called 4-4 sheetings. Besides supplying the home demand, there were shipped in five months, to the Northern market, 249,000 yards of cloth, and 6400 pounds of batts.

A spinning frame in this factory, made by the Matteawan Company of New York, produces nine skeins per spindle per day.

The Commissioners on Drunkenness in Great Britain estimate the value of labor lost through intemperance annually at $200,000,000. This is a sum nearly equal to the whole income of the Government.

NEW YORK, JULY 21, 1849.

### Use and Abuse.

There is always more sickness during this, than any other season of the year. Disease too is more rapid in its work, and hence we have more deaths. Many causes contribute to produce these results. The extreme heat of the weather is no doubt the principal one. Putrid gases, the product of animal and vegetable decomposition, are injurious to the human system, and these are evolved with astonishing rapidity in an atmosphere above fermenting heat. In summer the atmosphere is continually above this heat, hence malaria poisons pollute the atmosphere we breathe — The delicate framework of the lungs is easily attacked with some gases, but our knowledge of the nature of malaria is very limited, yet when we know what fearful results may be produced in mixing our atmosphere with another gas, or changing its component parts, we may well say of man, in the language of Job, " he is crushed before the moth."

In large cities the atmosphere is contaminated at every season of the year, but more especially in warm weather. Then we have exhalations from sinks and drains, and every stagnant pool sends forth its malarian products and clouds of poisonous insects, which many suppose are inhaled while we breathe, and are the real causes of disease.

It is a well known fact that mountainous regions are always more healthy than others, Cities that are built on hills produce the cleanest bills of health. One cause no doubt is the difference of temperature, but the principal causes are good drainage and ventillation. The absence of stagnant pools, and the better circulation of pure air around dwellings that are built on uneven ground, are the prime causes of better health in high than in low situations. To make our cities healthy, we should be guided by sound sense in having a good system of drainage, a plentiful supply of water, and room to breathe. On level ground, it is difficult to have an effectual drainage. In this case art should step in and apply the effluvia trap to keep the drain openings always shut, excepting to receive the drainings from above. Spirited cities will always provide plenty of water, and surely houses can be built with room enough between each for a good circulation of air, and surely we might expect, that when common sense and the dictates of humanity point to this as one grand means of health, it would not be abused by selfishness. But the houses in our city at least, are stuck together, almost like prisoners in the black hole of Calcutta, and at the present moment, were it not for the abundant supply of water which we have, our city would be one vast charnel house. As it is, we cannot attribute its present healthy state, to any thing else than a good supply of water. The highest number of deaths from cholera in one day, was 55. This number out of a population of half a million, is only 1 in 9,090. This is the time when vegetables in great quantities are brought to market, and as the stomach is more weak in warm than in cold weather, many seek to gratify epicurean desires, by stuffing the body with salad and other indigestible vegetables. The result is a disordered system, affording an easy entrance to the shaft of the destroyer. Many people become so alarmed during special visitations of disease, that they adopt a new regimen to prevent it, and thus change the system, making it an easy prey to disease. We have known a few cases of this kind. It is not in the using of common food that the evil lies, it is in the abuse of it, and this at any time is a sin. It is good to be prudent to avert disease, but who can by any specific defy disease. We believe that many good people use too much *preventative* drops of brandy, which may create in them a disease more direful than the cholera. In its own place, brandy may be good to cure disease, but we are afraid that few discriminate between *use and abuse*.

### Flax Cultivation and Manufacture.

Flax and hemp are now grown to a considerable extent in some of the Western States. In 1847, there were imported into New Orleans from the interior States, 2645 tierces of flaxseed, and 1090 barrels of linseed oil. At Cincinnati there arrived by the Miami canal, in the same year, above 43,000 bushels of seed and 1400 barrels of oil. At Portsmouth there arrived 4600 bushels of seed, and at many other cities in the central and western States, the arrival of flaxseed or oil was proportionately great. The American produce of flax fibre varies from 300 to 1000 lbs. per acre; the Irish produce in scutched flax varies from 500 to 900 lbs. the acre. Perhaps the great benefit of flax growing to any country is, that it is a profitable crop agriculturally, and a great source of manufacturing industry. In this point of view, it is a crop far superior to any food crop which could be raised. Flax crop is a source of industry, of skillful labor, of manufacture.

American farmers generally sow their flax too thin. They have a strong stalk and a coarse one, therefore, the flax produced is not so fine.

It has been found that 1680 pounds of dressed flax, when converted into cambric pocket handkerchiefs, spun by hand, employ constantly for twelve months 158 women in spinning, 18 weavers, during the same period, in weaving it, 40 women in hemstitching or veining the handkerchiefs. Thus giving in all, employment to 210 persons the year round, arising out of the growth of 3 acres of one plant useful in manufactures. This does not include the hands that are supported in raising the raw article. What a field for employment in a home market. At present, we could in no shape compete in price with the linen made in Ireland. French embroidered linen collars and linen cambric handkerchiefs are the beau ideal of grandeur to our fair and gay ones, but the most of these articles come from the North of Ireland, which sell under a French name, and by giving " honor to whom honor is due," we say that they surpass the French goods. Much as has been said of Irish linen, and the fame it has conferred upon Ireland, it was the banished Huguenots of France that first introduced the manufacture into that country. This is one good that religious persecution in another country, did to Ireland.

A very valuable improvement has recently been invented in this State in the preparation and manufacture of flax. The flax is prepared, drawn in a certain state upon the common drawing frame, and it is spun like cotton and on the same machinery. In short, the flax is so prepared as to be drawn and finished on cotton machinery; producing yarn far surpassing in beauty any ever produced in the common way, and at a great deal less cost, as it dispenses with the use of the Hetchell Gill Frame, except merely for spreading the flax into strakes. The linen trade will yet be prosecuted vigorously in the Northern States, for it is not likely that in the cotton manufacture, the North will be able to compete with the South, in thirty years hence.

### Flying Steamers Again.—Pennington & Company.

The Flying Machine of Professor Andrews, which was exhibited at the Inventors Institute, Perth Amboy, N. J. on the 4th inst. was the means of producing a profit out of pocket of more than $200. While we are sorry that any person should lose money by being humbugged, we have no sympathy whatever with those who lose money by trying to gull the people—their intentions are good enough to make all they can out of those who might be credulous enough " to swallow a mountain." We have recently received two handbills giving a description of another Flying Steamer, in embryo at Cincinnati, and since " opposition is the life of business," as one donkey brayed to another, we must exhibit the opposing claims of the new Air Navigators. This is their advertisement.

" Pennington & Company propose to build an Ærial Ship at a cost of ten thousand dollars. It is well as at this time to treat of other expenses, viz. a Depot of Ground lying level or slightly inclined. The ultimate success of ærial navigation would suggest the necessity of a Ship House, placed in the centre of a lot of ground from seven to ten acres in the area. We could no more operate in the air without a regularly arranged Depot, than they can in Rail Roading. It is proposed to build the ship in the city of New York, and her engine in the city of Boston; those are the selections by the inventor. The public are respectfully informed that the present engraving was copyrighted under the appellation or title of Pennington's Ærial Steamship or Composite Balloon, in the United States District Court of the State of Louisiana, March, 1847. N. B. The construction of the steam balloon may not require more than 3 months, provided that such a material can be obtained for the Balloon Cloth.

JOHN H. PENNINGTON."

There is one thing new in the above advertisement, viz. that without Railroad Companies having *regularly arranged* depots, they could not navigate the Air. The concluding sentence in the above too, is a beautiful piece of intelligence. " The construction of the steam balloon may not require more than 3 months, provided that such a material can be obtained for the balloon cloth." Here we are informed that the material required is *three months*. They will surely get that, and enough of it. This steamer is to be 230 feet in length by a proportionate breadth of a water craft. The engraving of it represents a huge dragon fly slashing through the regions above with two of the Egyptian Pyramids, base to base, slung over its shoulders. It raises a little house in its claws, all fenced round to prevent passengers throwing somersets overboard. They look like a cargo wheeled along in an omnibus belonging to the Prince of the Power of the Air.

If any person or persons think, that we doubt the practicability of such a project, we assure him or them, that we have no more doubt of it, than that our old great grandmother oftentimes took a trip across Penobscot Bay on a broomstick, in the good old days of witches and warlocks. The improvement over the broomstick mode of navigation, consists in adopting the proper apparatus to suit the fashions of the times. Rocking chairs, rose water, fans, segars, the latest novels, and papers containing the account of the latest elopement, will no doubt be found on the table of the new Flying Ship. Make room, therefore, we say for Pennington & Co. Go away Porter, Robjohn and Andrews. Your ideas are not quite large enough, and we must tell our citizens of Gotham, get ready your lot of 7 acres for the depot as soon as possible. What think you of purchasing the lot on the top of Trinity church spire. That would be a fine airy location, well suited for a point of departure.

### Lightning Rods.

MESSRS. MUNN & Co.

Although I think your piece on this subject in last week's Scientific contains much truth, and good advice, yet as it suggests considerable difficulty in procuring suitable rods and nicety in putting them up, I imagine the article will have a tendency more to prevent than encourage their use.

Aside from the great indifference manifested, it is surprising to perceive how many bugbear suggestions people make about them, as to how they should be made, &c.

Partly in opposition to many of the recommendations about lightning conductors, I offer my own experience and that of Mr. Merriam, as detailed in my communication sent you last week, showing that small 1-4 and 5-16 inch rods, and the various imperfectly erected rods have for over 30 years, protected life and in most cases property.

I have known buildings injured, and at least one cotton factory destroyed by lightning, it having imperfect rods. I have known some few injured with apparently good conductors. But very little mischief has been done to buildings with imperfect rods compared with the amount supposed to have been saved.

Why discourage people by saying, " nine tenths of those having them are not much better off,"—that it is so important they should be " capped with platina, golp or silver," except merely to show that thus " the highest possible degree" of perfection may be attained.

Now most people know that electricity is sent the whole length of our country on still smaller iron wires, hundreds of miles at a leap, I deem it unwise to attach much consequence to the use of gold or silver, or even copper, for tipping rods It is rather late to suppose lightning won't light on raw iron, though the mere suggestion will do much to mystify the subject.

Such rods as are used on board war vessels can be had by the quantity, either tinned or untinned, and 100 feet long it desired, for from one to two cents per foot.

Since the facts published by Mr Merriam, *that small rods have afforded the desired protection*, I have renewed my diligence to get people to provide *great protection* at a *trifling cost*, rather than discourage the many by proposing " the higest possible" security. To protect one end of a building is better than to protect no part of it.

The rule I laid down in the communication I sent you a few days ago, will answer the purpose, though no doubt a more perfect one may be framed.

I perceive that the Smithsonian Institute have ordered that this subject shall be specially reported upon. I hope it will disseminate much " useful knowledge among men," on this important subject. CLARK RICH.

*Shoreham June* 29, 1849.

[Experience is the best guide in respect to the size of the Conductor, whether it be a wire or a rod, or a strand of wires. No sophistry can resist facts—we bow to them.—The wire now coming into use for telegraphs, is iron wire covered with zinc. It answers an excellent purpose. It was first used in 1846.—ED.

### Soap Stone.

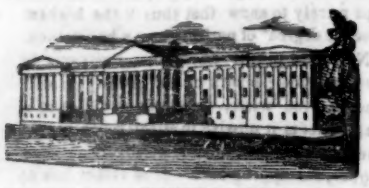
This is a mineral of the Magnesian family. It is of a grayish color. It has a dull fatty lustre, feels greasy, easily cuts with a knife, and is somewhat tough. It is infusible before the blowpipe. It consists of silica 44, magnesia 44, alumina 2, iron 7.3, manganese 1 5, chrome 2, and a trace of lime. It is found in various parts of Europe and America, and is sometimes used in the manufacture of porcelain. It is used for polishing marble, alabaster, and mirrors. It is used to make the feet slide easily into tight boots, to remove grease spots in silks by strewing the dust on the spot of grease, covering it with a piece of paper, and placing a warm iron on the top. The soap dust attracts the grease and takes it out of the silk.

There are various kinds of soap stone, differing somewhat from the component parts above, and some of it is very beautiful. It is called *steatite* in Geology, and there is a spotted kind found in small veins, which when it is cut into cameos and burned in a crucible, assumes a beautiful aspect. It has been known among us, as a most capital substitute for fire brick, and it is more abundant in this country than in any other. It is very valuable, because pliable in the hands of the operative, to be cut or sawn into any form. At Mariettville, Md., are great quarries of it, and they are now making it into various useful articles. Bathing tubs, made of slabs, that are sawn out, grooved, tennoned, dovetailed together and cemented, are useful and durable articles. It is made into rollers for factories, used for moulders' dust, in antifriction grease, for water pipes, filters, and a great many other useful applications. In short, it is one of the most useful, and therefore the most valuable of minerals of our country.

A Cotton Mill, the first established in northern Ohio, has recently been put in operation at Sandusky, and is now producing heavy sheetings which are pronounced " equal to the very best manufactured in New England."

The St. Andrews Standard, of New Brunswick, says that a mine of yellow ochre, of excellent quality, has been found while making the new road from St. Stephens to Moors' Mills, about two miles from the former place.

A California adventurer, writing to his friends, says that when he first went to the diggings he hadn't a rag on his back, but now he is covered with them.



## LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

*For the week ending July* 10, 1849.

To Samuel J. Seely, of New York City, for improved arrangement of sections in a Life Preserving Hammock. Patented July 3, 1849.

To William B. Waldran and G. Hargitt, of Shelby Co. Tenn., for improvement in Brick Presses. Patented July 10, 1849.

To Thomas A. Chandler, of Rockford, Ill., for improvement in Mills for Grinding. Patented July 10, 1849.

To John W. Hoffman, of Philadelphia, Pa. for spring and tackle Sash Stopper. Patented July 10, 1849.

To C. C. Dow, of Windham, Conn., for improvement in Pressing Bonnets. Patented July 10, 1849.

To Charles A. Krechler, of Stockholm, Sweden, for improvement in Distilling Apparatus. Patented July 10, 1849.

To Jacob Stroop, of Philadelphia, Pa., for improved Window Shutter Fastener. Patented July 10, 1849.

To Abraham McDonough, of Philadelphia, Pa., for improvement in Portable Cot Bedsteads. Patented July 10, 1849.

To Rufus Porter, New York City, assignor to Richard Van Dyke, of the same place, for improvement in the arrangement and method of working the valves of auxillary Engines for Feeding Boilers. Patented July 10, 1849.

To Charles K. Tisdale, joint inventor and assignee of James and Thomas Keane, of Fishkill, N. Y. for improvement in machinery for Spinning Cotton. Patented July 10, 1849.

### Circassia.

Circassia is a mountainous, but very fine and beautiful country, bordering upon the Black Sea at its Eastern extremity. It is also contiguous to the Russian Territory lying toward this extremity of the Euxine and interposes its lofty mountains and fertile valleys between the clutch of Russia and those more level and less wild countries toward the Euphrates and the Tigris. It is the aim of this ambitious power Russia, to become possessed if it can, of all the realms contiguous to the Black Sea, on all sides. On one side "the Wolf" has already laid his paws on the Danubian Provinces, Moldavia, Bulgaria, Wallachia, and is, on this side, therefore, fast advancing toward Constantinople. But before it can enslave the tracts lying on the southern coast of the Sea, it must subdue and pass the fine people who hold Circassia—a race, in physicial requisities, the finest specimens of men now to be found on this globe, and of courage and activity unsurpassible. Against these noble but unoffending people the Muscovite serfs have now, for many years, been carrying on, cruelly, bloody, but fruitless wars. No quarter is given; and the amount of lives lost is not known, excepting that generally, it is very great. It is believed that, taking battle, sickness, fatigue, altogether into account not less than 200,000 Russian serfs have left their bones among the wild passes and this without gaining any ground that is tenable. The Czar, in furtherance of this murderous conflict tries to stop all access by sea to Circassia.

### A Female Prophet.

There is a young girl near the Philadelphia Pike, in Brandywine Hundred, who imagines herself in a trance, and that she can prophecy and hold conversation with the Lord. She is constantly pretending to hold conversation with the Lord in Latin. She got religion at Mount Pleasant; she then stated that about this time she would be able to prophecy.—Some of the Brandywine physicians went to see her, and took down some of her Latin conversation. Crowds are there in carriages and on foot to see her—and many appeared astonished at what they consider her true revelations.

For the Scientific American.

### The History of Steam Navigation.

ROBERT FULTON, AND HENRY BELL.

From the moment that Fulton's steamboat left the foot of Cortlandt Street, in the city of New York, steam navigation has not ceased for a single day—its progress has been onward and to the praise of Robert Fulton, (however deeply we may respect the memories of other steam navigators) we are indebted, for the perfect establishment of steam navigation.—The Clermont made successful trips to Albany, and her first voyage so astonished the inhabitants on its banks, that many fled to the hills thinking it was some monster, while others believed it to be some terrible sign of the approaching judgement.

Many attempts were made to run the Clermont down by captains of sloops who thought their trade would soon be gone. Stringent laws had to be made to protect him, the same as had to be at a later day to protect the telegraph wires. Fulton was a man of the most remarkable perseverance. His character rises more grandly before our mind, the more we contemplate him. Behold him day after day, with his model under his arm endeavoring to enlist the French Court in his enterprise—Consider the many rebuffs he got, and last of all, behold him sneered at by his own countrymen when he came home; some calling him knave, fool and enthusiast; brave Fulton lived all opposition down, and from the first stroke of the Clermont's wheel on the Hudson, steam navigation has never receded, but like God Terminus of the Romans, it has gone on, and will go on with an all conquering energy.

Nearly contemporaneous with Fulton in America were the efforts of Henry Bell in Glasgow, Scotland, to establish steam navigation there. Some have endeavored to pluck a flower from Fulton's chaplet by saying that he was mostly indebted to Henry Bell for his correct knowledge of constructing a *steamboat*. In a biograghy of Robert Fulton a book found in our common schools, they have introduced some passages, which if true, would most effectually rob Fulton of his honors, but they are introduced through ignorance, to give Fulton all the greater honor, by saying, that "among the mechanic's sent out by James Watt, there was a young mechanic named Bell who assisted to put up Fulton's steam engine, and who afterwards introduced steam navigation into Europe." Had this been true, it would have been strong evidence that Henry Bell had come over to give Fulton some insight into the matter, as it is well known that Henry Bell was not by trade an engineer but a carpenter—certainly a very ingenious one. We have endeavored to find whether Henry Bell ever was in America or not, but have not been able to arrive at a correct conclusion. He claims to be the first inventor of the steamboat and there is an extract in the Report of the Committee of the House of Commons which says that he gave Fulton the model of his steamboat and went over and assisted him to build and fit her up. Mr. Stewart denies the correctness of this statement and from an examination of the subject, we are inclined to believe that he is correct. Henry Bell in his letter to the Manchester Guardian, in 1825 asserts his claim to be the first inventor of a successful steamboat. It is to be regretted that every discoverer and inventor is too passionately fond of the child of his mind, to allow any other to compare with it. To Henry Bell we would willingly accord great praise, we believe him to be as original an inventor as Fulton, and no doubt he was the first man who established steam boat navigation in Europe, but we have shown that neither Robert Fulton nor Henry Bell were the first inventors of the steamboat, yet to them great honor is due, but not all the honor, for they undoubtedly learned much from the very failures of their predecessors. We would willingly say a word to the honor of Mr. Bell—he was a mechanic and a self taught engineer. When he proposed to navigate his native Clutha by a steamboat there was no rich person like Robert Livingston who came forward to assist him, but speedily although but a mechanic, he contracted with a shipbuilder "John Wood" to build a boat after his own plans, and with an engine of three horse power he launched his small steamboat of only 40 feet keel, and boldly faced the sea with her. it was perfectly successful. This was in 1811, at that time the steamboat was so well known in New York, that a book on architecture published by Pope at that time, has a steamboat on the frontispiece, crossing from Jersey to New York. In 1811 a Mr. Dawson an Irish gentlemen built a boat and propelled it with a high pressure engine, and what is very singular, although he and Henry Bell knew nothing about the experiments of one another, yet it so happened that they named their boats with the same name "The Comet." Henry Bell was a man of wonderful energy. He built several steamboats and opened up quite a number of steamboat stations. He sold the first steamboat that went to London and the first one that went to France. After he had established steam navigation, there were plenty of wealthy men who took it up, men who with wealth built large and powerful boats and of course reaped all the benefits of the keen capitalist at the expense of the poor inventor, who was reduced to poverty by his experiments.—He was a man of great sagacity. He laid out the track and the steam Mail route from London to India 20 years before it was established and in his famous letter to the Manchester Guardian, he makes this wonderful statement, "I will venture to affirm that history does not afford an instance of such rapid improvement in commerce and civilization as that which will be effected by steam vessels, one sees it already, he says, in the meeting on board of them of the gathering of all nations to harmony, unity and concord."

The build of the European and American steamboats have been very distinct. Here, we have till within three years, built them for speed on smooth waters, in England they were all built to stand the tempestuous waves that dash upon those stormy coasts, and so very beautiful and perfect was the model of Henry Bell's first boat only 40 feet long, that it actually crossed the Irish Channel, weathered a most terrific storm and navigated along the English coast amid the breakers of the stormy Atlantic, so perfect was the model and construction of that little vessel, that it has been a pattern to all the British vessels since—and except in a finer finish and vessels of great size, those splendid vessels which are now making such remarkable voyages across the Atlantic to this port, there is very little difference in them from the Comet—Henry Bell's first boat.

*(To be continued)*

### Dyeing in China.

Dobel in his "Residence in China" says, "The perfection of the mechanic arts in China cannot be denied in certain instances; but this is evidently not the result of a regular combination of scientific improvements. It appears to be the effect of the labored experience of ages, brought slowly and difficultly to a certain point, where it is stationary, and cannot advance further, until science shall dispel the prejudices of habit and the clouds of ignorance. There is certainly a superiority in several of their silk manufactures, as it regards the loss and the fixing of the colors, and the rendering them so bright and permanent; but this is not produced by any secret mordant or process unknown to Europeans. I was once present at the dyeing of silks; and, on examination, found the process conducted in the simplest manner, with the commonest mordants used in England.—They know very little of the chemical agents, the use of which has become so common in Europe; and the brightness and permanency of their colors must be derived from a great experience of the application of the mordants the climate, and other favorable and concurring circumstances. Owing to the cheapness of labor, a very large number of hands are employed; therefore the work goes on with a rapidity almost beyond conception, and the silks are immediately hung out to dry, during the prevalence of the north wind, called by them Pak Fung. Certainly, in other climates and under different management, more time would be required, and that circumstance would suffice to alter very much the appearance of the colors.

The Chinese never attempted to dye any fine silks with rich colors until the Pak Fung commences, which generally happens towards the last of September, or by the beginning of October. This wind is so remarkable in its effects, and so immediately felt, that should it begin at night, even when all the doors and windows are shut, the extreme dryness of the air penetrates into the house immediately, and the furniture and floors begin to crack, with a noise almost as loud as the report of a pistol. If the floors have been laid down in summer, when the air is damp, or if the planks be not exceedingly well seasoned, and secured with iron cramps, they will open an inch at least when the north-east monsoon commences. The Chinese will not even pack tea or silks for exportation in damp weather; that is to say unless they are hurried to do it by the strangers who have business with them and wish to get their ships away sooner than ordinary. I have known a ship detained three weeks longer than the captain wished at Canton, because the security machine would not pack the silks which formed part of her cargo, until the weather became favorable. This will account, in some measure, not only for the permanency and beauty of the dye, but likewise for the care which is taken to preserve it. The Chinese say that if newly dyed silks be packed before they are perfectly dry, or in damp weather, they will not only lose the brightness of the color, but will also become spotted.

### The first Saw-Mill.

The old practice, in making boards, was to split up the logs with wedges; and inconvenient as the practice was, it was no easy matter to persuade the world that the thing could be done in any better way. Saw-mills were first used in Europe in the fifteenth century; but so lately as 1555, an English ambassador, having seen a saw-mill in France, thought it a novelty which deserved a particular description. It is amusing to see how the aversion to labor-saving machinery has already agitated England. The first saw-mill was established by a Dutchman in 1663; but the public outcry against the new-fangled machine was so violent, that the proprietor was forced to decamp with more expedition than ever did a Dutchman before. The evil was thus kept out of England for several years, or rather generations; but in 1768, an unlucky timber merchant hoping that after so long a time the public would be less watchful of its own interest, made a rash attempt to construct another mill. The guardians of the public welfare, however, were on the alert, and a conscientious mob at once collected and pulled the mill to pieces. Such patriotic spirit could not always last; and now, though we have nowhere seen the fact distinctly stated, there is a reason to believe that saw mills are used in England.

### Knowledge is Power.

It is not the calling which makes the man, it is the man who gives character to the calling and the reason why the professional man stands higher in the social scale is, that by the fortunate circumstances of his life, his opportunities for knowledge have been greater, and his understanding is more improved. It is an eternal and immutable law of our nature, that superiority should claim our deference. The boy pays homage to the man, the ignorant to the educated, and the weak to the strong minded. Knowledge always has been is now, and always will be, power; and the only way in which the working classes can place themselves on an equality in the social scale with the highest grades of society, is by improving their moral and intellectual condition.

### Abuse of Magnesia.

People should be very careful in the use of Magnesia. It is a very dangerous substance to use, and there are too many, we believe, who use it for the stomach for "heart burn," who do not know the dangers attending its employment for that purpose. The use of it has been the cause of many cases of "stone," and it has been discovered that the terrible disease in Switzerland called Goitre, is due to the action of magnesian salts on the system of the inhabitants—the salts being found in solution with the waters of the Swiss valleys.

The Locusts in the western part of Pa., and eastern part of Ohio, are on the increase.

### TO CORRESPONDENTS.

"O. H. P. W. of Ala."—We should think Minifie's Mechanical Drawing Book would suit you, if you wish to acquire a knowledge of the art. In regard to your last enquiry, we should advise you to address James Stewart, 106 Elm st. We have not the information you desire. The $1 enclosed has been credited to Mr. Williams.

"A. W. of Maine."—Your friend Mr. M., called upon us and explained the peculiarities of your invention. We showed him a model patented by Mr. Arnold of this State, which he acknowledged to be the same in principle. We cannot advise you to apply for a patent, believing it would prove unsuccessful.

"S. H. A. of N. Y."—Your letter of the 5th inst. reached us in due time. Such a work as you want cannot be obtained in this city. We have had several enquiries for a practical work but as yet have not been able to supply a single copy. Your other enquiries are entirely foreign from our business, if we possessed the information we should gladly furnish it.

"S. & C. of S. C."—Your letter of the 10th inst. has been received, and the pamphlet ordered, forwarded by mail. Tell your friend that Mr. Culbertson of Cincinnati, has a machine that will exactly suit him; it is the only one we know of that will be likely to answer his demands.

"W. S. of N. H."—We have no other but a favorable opinion of your improvements in the power loom, and are satisfied from a minute examination of the drawings that the objections referred to in our letter of the 12th inst. are beautifully obviated. We did not say that they were *not* obviated, we merely added that they were not clearly shown in the drawings.

"M. S. of Vt."—Your specifications and drawings were deposited in the Patent Office last Friday week. You can manufacture and sell your narrows to whom you please while the application is pending, but you must not attach the word "patent" to them, nor give the purchaser to understand that they are patented. It is impossible for us to tell when the case will come up for examination.

"J. F. M. of Pa."—The drawings of your self-adjusting Fly, has been examined. We think it new, and patentable Send a model. When we receive it, you will hear from us.

"J. R of Wis."—We have no volumes or odd numbers of vols. 1 and 2. Vol. 3, bound, can be sent for $2,75 The balance, $1, your due, has been credited.

"G. W. H. of Tenn"—Send the drawing and description of your Feeder, and we can very soon tell the difference between the two.

"G. W. H. of R I."—It will be better to refer to the others at another time. Give us a little more knowledge about the Divider so as to present some of its features. You are correct about the iron.

"E. H. M. of Ill."—Your letter of the 5th accompanied with the names of 10 subscribers and a drawing, &c. of your alledged improvements in "Water Filters," has been received and the business attended to as per your request We have not had time to examine into the merits of the Filter but will write you when we receive returns from the Patent Office, which will be in the course of a week.—We hope you will send us a drawing of the "Butter Machine," as we have enquiries concerning it.

"R. B. of N. Y."—Wrote you by mail on the 14th inst. The letter was not favorable to your prospects.

"W. B. G. of Boston."—You can go on now and build. All is correct at the Patent Office. We can see no objections to the self acting Tracer. A fair experiment is the best test. We have heard of Jordan's but do not know the mode of its operation nor whether it is of much worth. We have not heard a word about its introduction into this city. You will find it in Ree's Cyclopedia in the article "Carving."

"E. B. W. of N H."—Your business is progressing and the papers will be forwarded to you for signatures in a few days.

"G. W. E. of N. J."—Your communication came too late for this number. It will receive attention next week.

"J. E. W. of Ct."—In regard to the utility of Dr. Worster's Diving bell, you are referred to a letter form Rev. Walter Cotton, late Alcalde of Monterey published in No. 42 Scientific American. We have confidence in its success, and believe it to be the very desideratum that will facilitate the operator in removing the rich deposits from the interestics found in the bed of the rivers. Your letter has been handed to Dr. Worster for attention.

"J. S. of Indianapolis."—We shall require a more thorough description of your machine before we can understand it. You do not clearly explain how the "scribing" operation is performed. Please attend to it without delay.

"R. S. T. of N. J."—The price of the Camera Lucida is $6. Please remit that amount and one shall be forwarded without delay.

"J. E. A. of Mass." "C. R. of Vt." "L. S. E. of Pa." "J. & M. and "D. V. of N. Y." —Your specifications have been forwarded to you for signatures. Return them as early as possible.

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Money received on account of Patent Office business since July 11:—

J. M. J of Mass $37. M. S. of Vt. $15; and E. B. R. of Vt. $15.

### Pine Lumber in Maine.

A correspondent of the Maine People's Press, writing from Moosehead Lake, June 18, tells of having just taken across said Lake, a distance of 17 miles, the largest raft of pine logs ever seen thereabouts—containing, by actual survey, twenty-one and three-fourths acres. These logs are taken at different landings upon the eastern shore of the Lake, and towed by steamboats across to the outlet or head of the Kennebec waters, by which they are borne to market.

## Advertisements.


### TO FOUNDRYMEN AND MACHINISTS.

SOME persons who had obtained a knowledge of T. G. Bucklin's process (Patented May 8, 1849,) for treating Iron Castings, before it was patented, have attempted to sell it as a secret.

The patent embraces all possible modes of treating iron Castings with acids for the purpose of converting the surface "into Plumbago and then reducing them to the proper form and size"

I own the patent for the States of New Jersey, Pennsylvania Delaware, Kentucky and Indiana

If Foundrymen or Machinists want the invention they had better buy the right to use it of Warren Gale my only authorized agent to sell it, and not from him unless he can present the proper documents.

This process is now in general use in all the Eastern and some of the Western Cities.

R, BELL.

Troy, N. Y. July 1849. jy21 3t*

### NOTICE.

☞ We have constantly on hand and for sale:

| | |
|---|---|
| Minifie's Mechanical Drawing Book, bound in calf, : : : : : : | $3,00 |
| Cook's Condensing Engine, Plate and Book, | $3,00 |
| Leonard's Mechanical Principia, : | $1,50 |
| Scribner's Mechanics, : . : | $1,00 |
| Ewbank's Hydraulics and Mechanics : | $2,50 |
| Morfitt's Chemical Manipulations, : | $2,50 |
| Kanleut's Architecture in numbers, each | 50 |
| Arnott's Gothic Architecture " " | 25 |
| Camera Lucidas, : : : : | $5,00 |

j14 MUNN & CO.

### STEAM BOILER EXPLOSIONS.

THE subscriber having been appointed sole agent for Faber's Magnetic Water Guage, is now ready to supply the trade and individuals with this celebrated instrument. Besides the great safety from explosions, resulting from its use, it is a thorough check against careless stoking and feeding. In marine engines it will regulate the exact quantity required in the "blow off" Pamphlets containing full information can be had free on application to the Agent, JOSEPH P. PIRSSON,

j14 tf Civil Engineer, 5 Wall st. New York.

### FOREIGN PATENTS.

PATENTS procured in GREAT BRITAIN and her colonies also France, Belgium, Holland, &c. &c., with certainty and dispatch through special and responsible agents established, by, and connected only with this establishment. Patents containing a synopsis of Foreign Patent Laws, and information can be had gratis on application

JOSEPH P. PIRSSON, Civil Engineer,

j14 tf Offices 5 Wall st. New York.

### A DYER

WANTS a situation. He is well acquainted with the dyeing of all fast and fancy colors on cotton yarn. He is also somewhat acquainted with woolen dyeing. He can produce the best of references in respect to character and qualifications to conduct the business.

Address J. MACFARLANE, care of Editor Scientific American. j14 2t*

### A CHANCE FOR SPECULATION.

THE undersigned wishes to find some person who will furnish means to introduce and apply for a patent for two new inventions. One of them is a Balance Rotary Slide for steam engines, noticed in No 39 this vol Scientific American, and the other is a Steam Governor, both valuable inventions. They can be made and sent to any part of the world at a trifling cost. Address immediately, post paid, JAMES W. CHAPMAN,

j14 3t* Washington, Davis Co. Ind.

### TO INVENTORS.

THE SUBSCRIBERS offer their services to persons wishing to obtain patents in the United States or in foreign countries, and will prepare specifications and drawings and take all necessary steps to secure a patent.

From their long experience as practical mechanics, added to a thorough knowledge of the Patent Laws and acquaintance with the details connected with the business of the Patent Office, they trust they will be able to give satisfaction to their employers, both in the clearness and precision of their specifications, and in the promptness and ability with which they transact all business entrusted to them,

Persons residing at a distance may procure all necessary information, have their business transacted and obtain a patent by writing to the subscribers, without incurring the expense of a personal attendance at Washington

Models can be sent with perfect safety by the express.

Rough sketches and descriptions can be sent by mail.

For evidence of their competence and integrity they would respectfully refer to all those for whom they have transacted business.

Letters must be postpaid. Office on F st. opposite the Patent Office. P. H. WATSON.

j30 4t* E. S. RENWICK.

### SOUTH WESTERN PATENT AGENCY.

THE Subscriber has opened an Agency for the sale of patent rights, machinery, &c. of every description. My object is to enable inventors and manufacturers to realize the fullest advantage from their rights by introducing them into the vast West. All kinds of really good machinery and inventions are wanted, such as stave dressing, barrel making, morticing sash, iron and wood turning, drilling, pressing and railroad machinery, as well as water wheels, windlasses, steam engines, cotton and woolen machinery, &c. To sell machines, &c. a model or machine will be needed; for patent rights a power of attorney would be requisite. My charges will be moderate, and energy used to forward sales. No charge will be made until some benefit is realized. Letters (Post Paid) will receive immediate attention.

References:—Geo Higgins and Geo J. Mankin, New York; S. Laflin, St. Louis; Hon. James H. Woodworth, Mayor of Chicago.

JOSEPH E. WARE,

a28 tf 65 Second st., St. Louis, Mo.

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☞ The Second EXHIBITION of the MARYLAND INSTITUTE for the Mechanic Arts, will be held at Washington Hall, in the City of Baltimore, from Thursday, 27th of September, to 13th October, inclusive. Machines, models, or goods sent to the address of H. Hazelhurst, Corresponding Secretary of the Institute, (expense paid) will be met with immediate attention, and every facility used to exhibit the same to the best advantage. j16 4m

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HAVING obtained a patent for a self-feeding machine to saw wood TWICE IN TWO at one operation, a model of which can be seen by applying to P. H. Watson, Patent Attorney, Washington, D. C I am now prepared to sell the right for the same, by States or smaller districts, as may best suit the convenience of purchasers. As this is a machine every where wanted, and believed to possess superior merit, it will be to the advantage of mechanics and patent dealers to attend to it.

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j2 6t* Greenfield, Highland County, Ohio.

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j9 3m*

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j14 6t* Athol, Mass

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Athol, July 3, 1849.

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J. STEWART is also authorized to act as agent for the sale of the celebrated Lathes manufactured by James T. Perkins of Hudson, of large size and at prices from $250 to $800. A specimen of this description may be seen at his factory as above.

j27 tf

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**Consulting Engineer and Counsellor for Patentees.**

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### Johnson's Improved Shingle Machine.

THE Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use. Manufactured at Augusta, Me. and Albany, N. Y. J. G. JOHNSON.

Augusta, Maine, Oct. 28, 1848. o28 1y

☞ Messrs Norcross & Co. No. 60 Nassau st. New York, are Agents for the sale of my Shingle Machines.

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### Lap welded Wrought Iron Tubes

**FOR TUBULAR BOILERS,**

From 1 1-2 to 8 inches diameter.

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THE Subscriber begs leave to inform inventors and others that he manufactures working models of machinery &c. in a neat workmanlike manner. Patterns of every description made for Castings.—Scroll sawing neatly executed. Mathematical and Nautical Instrument Cases of every description.

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j30 3m* Between Beekman st. and Peck Slip.

### MORSE'S AIR DISTRIBUTOR.

Detroit Foundry, May 20, 1849.

THE undersigned are the sole agents for the manufacture and Sale of Morse's Air Distributors for Michigan and vicinity. With the above improvement, Tanneries can use the WET TAN as it comes from the vat, and Saw Mills can use ALL KINDS of SAW DUST or wet bark and make Steam as readily as with wood, on the common grate.

Fourteen sets are now in use in Mills and Tanneries in this vicinity, and give abundant satisfaction. Numerous certificates of their great economy in the use of fuel are received from every place where they have been used. DEGRAFF & KENDRICK.

m26 2m

### MARDEN'S IMPROVED BALANCE CURTAIN FIXTURES.—Patented Oct. 1848.

FOR Sale wholesale, by J. A. B. Worcester, No. 43 Main st., near the City Square, and by the subscriber, GEORGE H MARDEN

j9 3m* Charlestown Mass.

### PATENT AGENCY.

SAMUEL C. HILLS, No. 43 Fulton street N. Y. Patent Agent and Agent for the sale of Patent Goods and Patent Rights—still continues to aid and assist inventors in procuring Patents and selling Rights. Charges moderate. Application per mail must be post paid. m26 tf

### MACHINERY.

THE undersigned have made such arrangements with Foundries, Machinists and Patentees, that they are prepared to furnish all kinds of machinery or mechanical tools at manufacturers prices. Steam Engines of any power, Horse power Lathes, Mills of all kinds, Presses, Planing & Shingle machines, Mill and circular Saws, and every kind of machine or Tool, used by a mechanic or manufacturer. Also a lot of second hand machinery for sale low.

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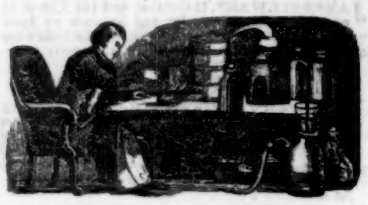


For the Scientific American.

**Patent Laws and Business.**

We have already pointed out three reforms which in our opinion should be made in the Patent Laws. These reforms are,

1st. A minute and specified description of claims, &c. sent to a rejected applicant in his letter of rejection.

2d. To grant patents to citizens for the introduction of new and useful inventions and discoveries.

3d. A mode of annulling a patent (by a writ of *scire facias*) if granted wrongfully, to be proven by fair trial.

The only difficulty in the way of carrying out the latter reform is in the case of infringements. The Patent Office might grant a patent for an invention, while there might be a patent in existence which the patentee would consider to be infringed upon by the new patent. We have numerous instances of this kind. In England patentees get notice of applications for patents, for similar inventions to their patents, and they are requested to show cause why such a patent should not be granted. This saves a great deal of litigation afterwards. Look at the many suits with us, against patented machines, by Blanchard, and the heirs of Woodworth. Look at the number of patents that have been set aside as infringements on them, and then we will be able to form some opinion of the capacity of the corps of the Patent Office to judge of infringements, and whether more bitter patent law suits have arisen since the Patent Office was armed with its rejection thunder, than before. A fair trial can only decide the question of an infringement. All cases of intringement lie in combinations to produce certain results. A new combination of old parts produces a new machine, and is the valid subject of a patent. A case of alleged infringement which we have before us, explains the matter of difference fully. A patent was granted in England for a machine for shearing cloth, by means of rotary helical cutters acting in combination with a fixed straight blade, and the machine was so arranged, that the cloth in passing through it came under the operation of the cutter blades, in a direction to be cut from list to list. This was found to be a highly useful combination of parts, but the same parts had been differently combined in a previously patented machine, in which the cloth was cut in the direction of its length. The patentee of the latter patent, carefully claimed only the combination of parts to cut from list to list, with a rotary cutter, and as the important results depended on that peculiar arrangement, Lord Tenterden said, "if before this patent the cutting from list to list by rotary cutters were not combined, then the combination to cut from list to list was new," and will enable the patentee to maintain it at law. Would some of our present judges have given such a decision? We are afraid that they would not.

We close our remarks on the Patent Laws at present with this article, and before we make a finish, we have a few words to say in reference to the management of the Patent Office.

Considering the importance of the Patent Office as a National Institution—reflecting upon the benefits conferred upon our country by inventions—such as the cotton gin, steamboat, telegraph, and hundreds of other machines, we feel deeply mortified at the shameful neglect and treatment of Inventors. The late Commissioner of Patents made a Report to the Patent Office on the 1st of last January, and I have been informed that it is not yet printed. What a scandalous piece of business this is. Some sections of it have been printed, such as the most unimportant, but the full Report—the one containing the claims, and which alone is interesting to patentees, is not yet published. The delay in printing these reports is getting worse and worse every year, and I must say that although the Patent Office is sustained by the money of patentees and inventors alone,—no tax upon the country, yet they are treated as a set of beggars, to whom every act of justice that is done is an act of charity. Inventors must unite to sustain their rights or matters will get from bad to worse.

JUNIUS REDIVIVUS.

**Dyeing Woods.**

For dyeing wood a fine black color, have a chairmaker's copper fixed, into which put six pounds of chip logwood, and as many veneers as it will conveniently hold, without pressing too tight; fill it with water and let it boil slowly for about three hours; then add half a pound of powdered verdigris, half a pound of copperas, and four ounces of bruised nutgalls filling the copper up as the water evaporates; let it boil gently two hours each day till you find the wood to be dyed through; which, according to the kind, will be in more or less time.

FINE BLUE.

Take a clean glass bottle, into which put one pound of oil of vitriol; then take four ounces of the best indigo, pounded in a mortar; put them into a phial (take care to set the bottle in a basin or earthen glazed pan, as it will ferment); after it is quite dissolved, provide an earthen or wooden vessel, so constructed that it will conveniently hold the veneers you mean to dye; fill it rather more than one third with water into which pour as much of the vitriol and indigo, stirring it about, as will make a fine blue; which you may know by trying it with a piece of white wood; put in your veneers, and let them remain till the color has struck through.

The color will be much better if the solution of indigo in vitriol is kept a few weeks before using it; also the best trough you can use, is one made of stoneware.

FINE YELLOW.

Take of the root of barberry four pounds, reduce it by sawing, to dust, which put in a copper or brass trough, add four ounces of turmeric, to which put four gallons of water, then put in as many white veneers as the liquor will cover; boil them together three hours, often turning them; when cool, add two ounces of muriate of tin, and you will find the dye strike through much sooner.

Fustic and quercitron will also dye good colors, the former with alum, the latter with muriate of tin.

BRIGHT GREEN.

Proceed as in the above receipt to produce a yellow, with fustic, and add the vitriolated indigo, as much as will produce the desired color.

BRIGHT RED.

Take two pounds of genuine Brazil dust, add four gallons of water, and after putting in your veneers, boil them well, for at least three hours; then add two ounces of alum and a little salts of tin, and keep it lukewarm until it has struck entirely through.

PURPLE.

Take two pounds of chip logwood and half a pound of Brazil dust, add four gallons of water, and after putting in your veneers, boil them well, for at least three hours, then add six ounces of pearlash and two ounces of alum and let them boil two or three hours every day till you find the color struck through.

The Brazil dust in this receipt is perhaps superfluous, as it only contributes to make the purple of a more red cast; use muriate of tin very little.

ORANGE.

Let the veneers be dyed, by either of the methods given, of a fine deep yellow, and while they are still wet and saturated with the dye, transfer them to the bright red dye, till you find the color has penetrated equally throughout.

**Remarkable Phenomenon.**

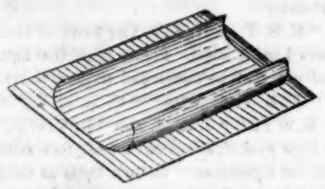
The Milwaukie Wisconsin is informed that the schooner Traveller, whilst on her passage from the Michigan side of the lake, experienced a very singular phenomenon. Whilst not a breath of air stirred upon the waters, a breeze was blowing aloft so strong that, with her topsails alone set, she ran seven miles an hour. No breeze was discovered on deck, but by going 15 feet up the rigging, it was sensibly perceived, and above it was bending and twisting the topmast as in a severe gale.

**Manufacture of Glass.**

(*Continued from page* 344.)

The "largre" is a tray to receive the cylinder of glass. It is made of wood, which becomes charred on its face, forming a cushion which does not injure the surface of the glass. When the sheet of glass is rubbed down flat, it is pushed into the annealing kiln and remains there until it gets cold, when it is taken out with a pronged stick and piled on its edge against the wall of the kiln. The following engraving shows a sheet of glass half unrolled on its "largre."

FIG. 7.



The glass kilns are worked for forty eight or sixty hours at a time, the men relieving each other at intervals of eight hours; as soon as the annealing kiln is full of glass, the fires are checked and extinguished, and the apertures carefully closed, in order that the glass may become gradually cool, sixty or seventy hours being usually allowed for that purpose, at the expiration of which time the sheets are taken or drawn out of the kiln and sorted forthe market. The flattened sheets are subjected to the annealing process for 130 hours, and it is from this cause that German sheet is always better annealed than crown glass; and being thicker and stranger than the latter article, as well as in larger squares, it is more tough, and consequently is better calculated to withstand violence or the injurious action of frost, properties of great value in all cases, but more particularly for covering skylights or conservatories, as when a proper thickness of sheet is employed, they stand with impunity the trial of the coldest winters and heaviest hailstones.

The thickness of glass blown as has been described heretofore, varies from the 24th to 5-16ths of an inch, or from eight or ten to thirty or forty ounces to the square foot; the thicker glass is not burst open exactly in the manner described, but when the cylinder is formed ready for opening, a piece of melting glass is "dabbed" on the end by an attendant and the blower stopping the hole of the pipe with his thumb, inserts the cylinder into the furnace; as the confined air expands, it forces open a hole at the spot which the melting glass has softened by its heat; the ragged edges of the opening are then cut off with the shears and the cylinder completed in the usual manner. Sheets thus made vary in size from about 30 inches by 26 inches to occasionally 60 inches by 40 inches in the hands of the superior workmen, who are also employed in making the "French shades" used for covering ornaments. For this purpose a cylinder is made of the necessary diameter and rather longer than the shade is to be when finished; the end, however, is not burst open but forms the top of the shade, the necessary beauty of shape being imparted to it by a series of most delicate manipulations almost indescribable, but consisting principally in the most precise management of the breath, and in allowing the end whilst hot to sink inwards like a cup, so that when blown out again it may assume exactly the curve required. No tools are used in blowing round shades, but oval and square ones are blown into wooden moulds; the pipe and cap are removed as usual, and the open ends cut square on the same principle as followed in squaring the ends of the cylinders.

Shades vary in size, some are very large and some very small. There are very few workmen capable of making shades of the largest size, which require lungs of the most capacious size.

Our article next week will treat of Plate Glass.

**Starching and Ironing Clothes.**

Clothes should be well rinsed before they are starched and then dried. When dry, they should be squeezed into a clean vessel of thick starch previously strained through a fine muslin cloth. They should then be shaken out and hung up to dry, and when dry dipped in clear water, squeezed and rolled up in a dry linen cloth. Some merely sprinkle them and roll them up till the damp finds its way through the mass, but as a general thing, this does not moisten them equally, which should be the case when ready for the iron. Some stir a sperm candle through the starch, and some keep one to rub on the iron while ironing. None of these plans should be used by the good housewife, however convenient and good they may be for market goods. The sperm is only to prevent the starch sticking to the iron, to produce a better gloss on the articles ironed. But if the face of the iron is always highly polished, and it is never used but at a good heat and the work smartly performed, there is no fear of the iron sticking to the starch—the work will be better done and quicker done. To keep the iron bright, free from oxide by the fire, and free from the starch, a Bath brick should be used on a small board, and every iron should be rubbed four or five times on it, when taken off the fire, and then the face of it wiped with a clean cloth.

**LITERARY NOTICES.**

Sartain's Magazine for August, is filled with a large amount of interesting original matter from the very first authors, and the embellishments are very numerous and beautiful. The publishers are enterprising men, and the patrons of the work need not fear of receiving the full value of a year's subscription. Ladies, don't miss of calling upon Messrs. Dewitt & Davenport, Tribune Buildings, and get a copy of this splendid number. Yearly subscription, $3; two copies $5.

Peterson's Ladies National Magazine should not be forgotten by the lovers of good reading. The beautiful mezzotint of Lady Mabel, by Gross, together with the touching story of her separation from the humble, yet faithful page Roland, and his return after a long absence is "Sir Roland Fitzclarence," forms the most prominent and interesting feature of this number. This magazine is published at $2 per annum, and is well worthy an extensive patronage.

**Diseases of Winter, Coughs, Colds, Asthma.**

This is a very able and comprehensive treatise, packed into a small space and sold for a low price, 25 cents, by the publisher, J. S. Redfield, Clinton Hall. The author of it is R. J. Culverwell, M. D.

**Women in all Ages and Nations.**

A book bearing the above title, embracing an historical account of the manners and customs of women in all ages, and showing the servitude to which they are subjected in barbarous countries, &c. &c., has just been published by H. Long & Brother, 43 Ann st. N. Y.

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